ReStore Inventory Control System

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**Abstract:**

The purpose of this document is twofold. One purpose is to examine the inventory control issues that are currently present at the Habitat for Humanity ReStore in Searcy, AR. The other, related purpose is to suggest possible solutions to the problem. The problem the ReStore has is with keeping track of inventory. There really is no inventory control system in place. The ReStore is in need of a simple yet higher tech way to keep track of inventory. The final recommendation is a simple excel spreadsheet that is updated when sales are made and when new shipments come in.

**Introduction:**

The Habitat for Humanity ReStore in Searcy, AR relies on donated merchandise to stay in business. Currently, the ReStore does not have a very strong inventory control system in place. It exists mainly off of the memory of employees. The ReStore would like to implement a system that helps keep track of merchandise.

**Objectives/Specifications:**

The objective of this project was to find a solution to the inventory control problem that was both effective and inexpensive. The ideal solution would meet all of the following specifications:

* The solution must be inexpensive.
* The solution should be able to keep track of the quantity of products in the store.
* The solution should also keep track of the price of products.
* The solution should be simple and easy for volunteers to use.
* The solution should reliable and maintainable over time.

**Conceptual Designs/Alternatives:**

Before settling on the final solution, several alternatives were considered. The three most prominent ideas were a traditional price tag system, the “laminated sheet” system, and a simple excel spreadsheet.

The traditional price tag system is something everyone is probably familiar with. It would involve tagging every item in the store with a barcode and scanning them at the cash register into a software program on a computer. It would subtract one from the quantity of a product once it is purchased, as well as display the price of that product. Products would ideally be scanned into the software database once they arrive from the shipment.

The “laminated sheet” system, on the other hand, may not be quite as familiar. It does have some very attractive features, however. It is very similar to the traditional price tag system, except that the only barcodes are on a laminated sheet at the cash register. The barcodes will have labels specifying what type of product is being sold. That is the key difference between the two systems.

The excel spreadsheet system is a very basic way to keep track of inventory. There will be several columns such as product description, quantity, and price. The sheet can be updated when new shipments arrive. During the day the cashier can keep track of purchases and update the inventory at the close of the workday. It is a very simple way to strengthen inventory control.

**Findings/Results:**

The three inventory control systems were all compared with the design specifications in order to determine the best solution to the ReStore’s inventory control problem.

The first system to compare is the traditional price tag system. At first glance, this system seems like a very reasonable way to meet the ReStore’s inventory control needs. Unfortunately, it is unsustainable for the ReStore. It takes a lot of time and effort to tag every item that gets donated. Since items are not shipped in bulk with barcodes, the ReStore would have to create these barcodes themselves. This would consume a large amount of time and resources. While this system might work well for traditional business models, it would not work well for the ReStore, which obtain its inventory by donation. The cost and maintainability of the system alone rule it out as a potential solution.

The second system to compare is the “laminated sheet” system. While this system is very similar to the traditional price tag system, there is one key difference that makes it a much better option. All of the barcodes are located in a laminated sheet at the cash register, which means making the barcodes is a one-time sacrifice. This saves a lot of time and money for the ReStore. If implemented correctly, this system has the potential to do a great job of keeping track of the quantity and price of products in the ReStore. Unfortunately, there are also some major drawbacks to this system. While free software is available for inventory control, my experience has been that it is difficult to learn. Most likely, the older volunteers at the ReStore will also find it difficult. Additionally, most of the available free software is designed for use in a traditional store that purchases many instances of the same product in bulk. A store that relies on donations is not very compatible with such software. It is also uncertain how well different barcode scanners will work with the software. Another issue involves the laminated sheet itself. Simple categories, such as “Chairs” for example, may be too broad. Unlike many stores, almost all of the chairs will be different. I doubt that the ReStore would want to sell all chairs at the same price. This system could be fantastic if full effort is put into it, but it will definitely take some time to set up. There will likely be a high learning curve and high level of maintenance for this particular system. It is up to the ReStore to decide if it is worth the cost in time and money.

The third system to compare is a simple excel spreadsheet. Sometimes a basic solution can help immensely for very little cost to the business owner. It is the belief of the author that this situation is one of those cases. While it is not as fancy as a barcode scanning system, it gets the job done with much less effort and cost to the business owner. This system meets all of the design specifications. It keeps track of inventory while being easy to implement and maintain. This system is what is recommended. Even if the “laminated sheet” system is implemented in the future, the excel spreadsheet would be a quick and easy fix while the “laminated sheet” system is still getting up and running.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Cost | Quantity Control | Price Control | Easy to use | Reliable/  Maintainable |
| Price Tags | 1 | 3 | 3 | 3 | 1 |
| Laminated Sheet | 2 | 3 | 2 | 3 | 1 |
| Excel Spreadsheet | 3 | 3 | 2 | 2 | 3 |
|  |  |  |  |  |  |
|  | Total |  | Key |  |  |
| Price Tags | 11 |  | 1 - Does not meet objective | | |
| Laminated Sheet | 11 |  | 2 - Partially meets objective | | |
| Excel Spreadsheet | 13 |  | 3 - Meets objective | |  |

**Conclusions:**

Due to the nature of how inventory is obtained at the ReStore, it will definitely be a challenge to implement strong inventory control. The ReStore needs a simple inventory control system that keeps track of merchandise. A “laminated sheet” system could help the ReStore strengthen its inventory control, but it would require a lot of dedication to it on the part of management. A barcode system will be very difficult to implement. It requires learning new software and instructing employees on how to operate it. This fact is compounded by the fact that barcodes will have to be created and kept up to date by the ReStore. There are also a lot of things that could potentially go wrong with the system. From software issues, to broken scanners, to problems even getting the system up and running, there is a lot of risk involved in taking on such a project without any paid help.

A simple excel spreadsheet system would help out a lot without requiring much investment. It would be cheap and easy to install, and comes with less foreseeable potential problems. A simple excel spreadsheet is what we recommend, and should be tried before investing heavily in something more complicated. Even if a barcode system is implemented, an excel spreadsheet would be a great way to keep track of inventory while that transition is being made. No matter what system is chosen, however, it will require discipline on the part of employees for it to succeed.

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